

इंटरनेट

मानक

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“जानने का अधिकार, जीने का अधिकार”

Mazdoor Kisan Shakti Sangathan

“The Right to Information, The Right to Live”

“पुराने को छोड़ नये के तरफ”

Jawaharlal Nehru

“Step Out From the Old to the New”

IS 12205 (1988): Bicycle Hub Assembly - PH Type [TED 16: Bicycles]



“ज्ञान से एक नये भारत का निर्माण”

Satyanarayan Gangaram Pitroda

“Invent a New India Using Knowledge”



“ज्ञान एक ऐसा खजाना है जो कभी चुराया नहीं जा सकता है”

Bhartrhari—Nitiśatakam

“Knowledge is such a treasure which cannot be stolen”

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*Indian Standard*SPECIFICATION FOR
BICYCLE HUB ASSEMBLY — PH TYPE

1. Scope — Covers the dimensions and other requirements for both front and rear hub assemblies. It does not cover the 'R' type of hub assemblies since these are covered separately in IS : 629-1988 'Specification for bicycle hub assembly — R type (second revision)'.

2. Dimensions

2.1 The dimensions of the front and rear hub assemblies shall be as given in Fig. 1 and 2, respectively. The screw thread dimensions shall conform to Fig. 3.

3. Materials

<i>Component</i>	<i>Conforming to</i>
Hub shell	IS : 513-1986 'Specification for cold rolled low carbon steel sheets and strips (third revision)', or IS : 1079-1973 'Specification for hot rolled carbon steel sheets and strip (third revision)', or Grade A of IS : 2107-1977 'Specification for whiteheart malleable iron castings (first revision)', or Any suitable die cast alloy
Hub barrel	IS : 2039-1981 'Specification for steel tubes for bicycle and allied purposes (first revision)'
Hub spindle	IS : 226-1975 'Specification for structural steel (standard quality) (fifth revision)'
Ball race	Type 'O' or 'D' grade of IS : 513-1986, or IS : 1079-1973, or IS : 226-1975, or Any alloy steel suitably heat treated
Hub spindle cone, nut	IS : 226-1975
Balls	Grade 200 of IS : 2898-1976 'Specification for steel balls for rolling bearings (first revision)'

3.1 The ball race and hub spindle cone shall be case-hardened to a minimum depth of 0.20 mm and 0.25 mm, respectively. The maximum case depth for ball race and cone shall be 0.3 mm and 0.4 mm, respectively. The hardness (with 5 kgf load) on spindle cone and ball races shall be at least 600 HV for the spindle cone as well as the ball race.

4. Manufacture

4.1 The hub flange shall be provided with spoke holes, as indicated in Fig. 1 and 2. The holes shall be staggered alternatively, countersunk on both sides of each flange for easy fitting of spoke heads.

Adopted 10 August 1988

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4.2 Suitable provision shall be made on the hub assemblies for proper lubrication. The manufacture of hubs shall be such as to prevent access of foreign matter inside the hubs.

5. Finish

5.1 The hub spindle shall have a smooth finish and shall be chemically coloured or zinc plated, to 'Service Condition No. 2' (Classification No. Fe Zn.12) of IS : 1573-1986 'Specification for electroplated coatings of zinc on iron and steel (second revision)'.

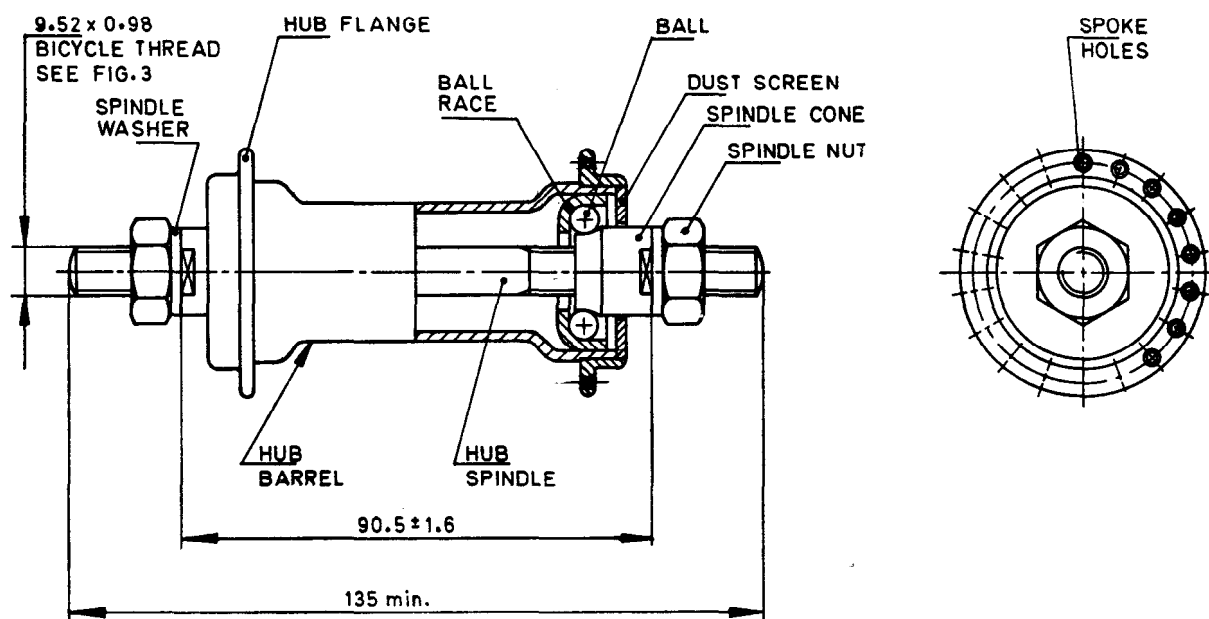
5.2 The inside of ball races shall be smooth finished to ensure free running of balls.

5.3 The cones shall be smooth self-finished or chemically coloured or zinc plated to 'Service Condition No. 1'. It shall meet the requirements of Grade 1 of IS : 1573-1986.

5.4 The spindle nuts shall be nickel-chrome plated to 'Service Grade No. 1' (Classification No. S Ni10b Cr r) of IS : 1068-1985 'Specification for electroplated coatings of nickel plus chromium and copper plus nickel plus chromium on iron and steel (second revision)' or zinc plated to 'Service Condition No. 2' (Classification No. Fe Zn.12) of IS : 1573-1970 or cadmium plated to 'Service Condition No. 2' (Classification No. Cd 8) of IS : 1572-1968 'Specification for electroplated coatings of cadmium on iron and steel (first revision)' or shall be chemically coloured.

5.5 The hub shells shall be nickel and chromium plated and electroplated coatings shall conform to 'Service Grade No. 1' with designation S Ni 10b Cr r of IS : 1068-1985 with the provision that *P*- or *d*-nickel and *f*-chromium may be substituted for *b*-nickel and *r*-chromium, respectively. The minimum thickness of coating shall be 10 μm (0.010 mm) in case of nickel and 0.3 μm (0.0003 mm) in case of chromium.

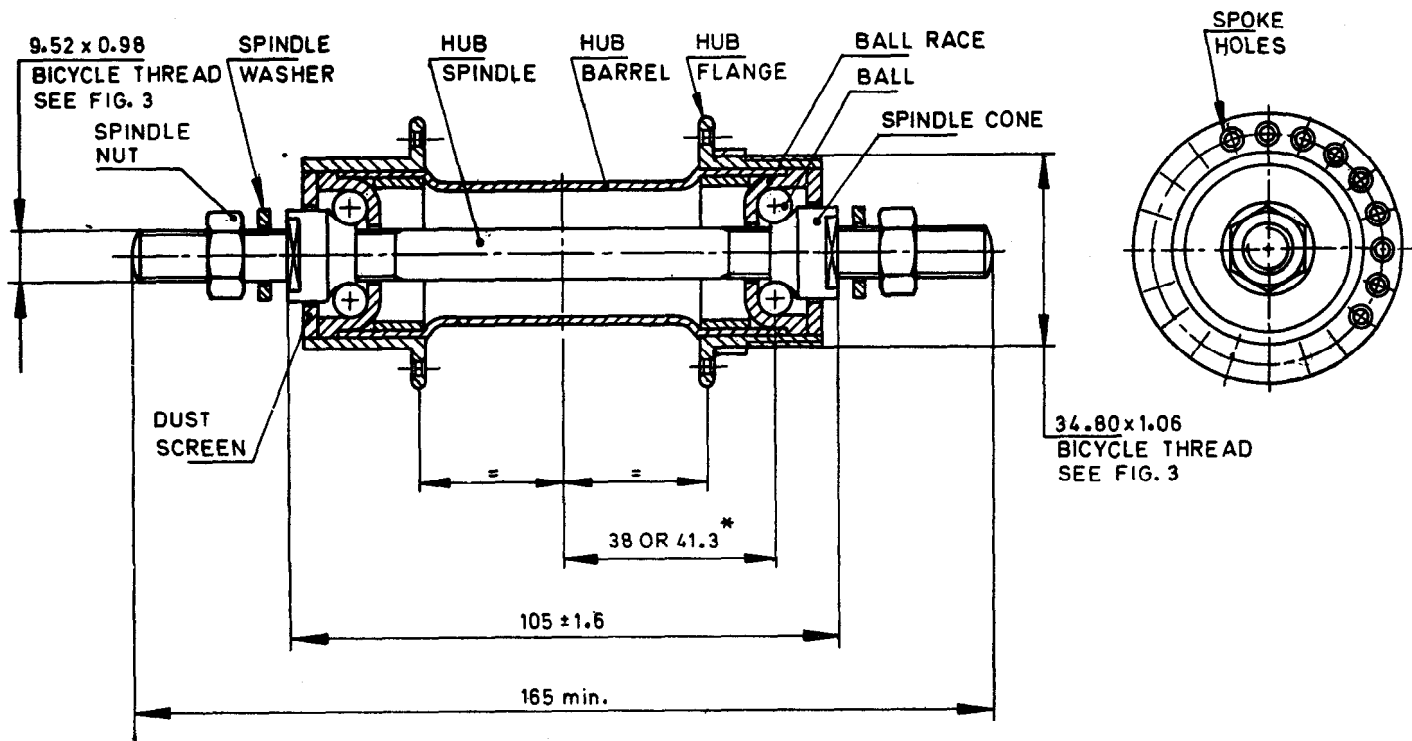
Note — In view of the shape of this component a uniform thickness of plating could not be expected. In order to ensure that the thickness of plating at any place is not less than specified, an approximately higher plating thickness would have to be aimed at.



No. of Spoke Holes	Hole Dia	To Suit Spoke Dia
10, 14, 16, 18	2.5 mm	2.032 mm
	3.0 mm	2.642 mm
	3.6 mm	3.251 mm

All dimensions in millimetres.

FIG. 1 FRONT HUB ASSEMBLY — PH TYPE



* IF INTENDED FOR ACCOMMODATION OF GEAR CASE

No. of Spoke Holes	Hole Dia	To Suit Spoke Dia
10, 14, 18, 20, 32	2.5 mm	2.032 mm
	3.0 mm	2.642 mm
	3.6 mm	3.251 mm

All dimensions in millimetres.

FIG. 2 REAR HUB ASSEMBLY — PH TYPE

6. Tests

6.1 Deflection Tests

6.1.1 The front and rear hub assemblies shall be revolved on their spindles. The concentricity of hub shell and ball race when gauged at the periphery of the flanges shall not be more than 0.3 mm.

6.1.2 The rear hub assembly shall be revolved on its spindle. When measured on the threaded flanged diameter of the adaptor, the radial deflection shall not be more than 0.3 mm and when measured on the flange face of the adaptor, axial deflection shall not be more than 0.4 mm.

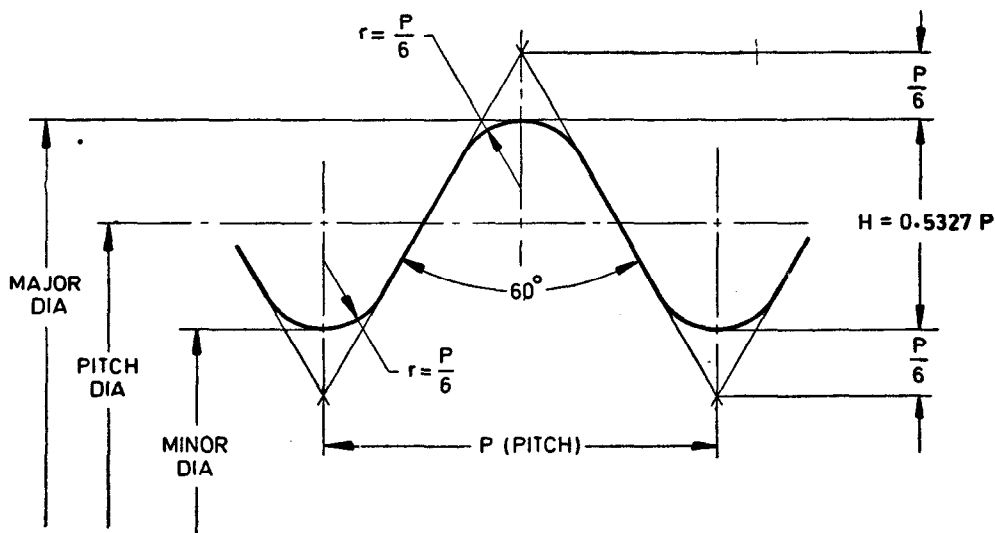
7. Marking — Hub assemblies shall be marked with manufacturer's name, initials or recognized trade-mark, and country of origin.

7.1 Standard Mark — Details available with the Bureau of Indian Standards.

8. Packing — Shall be as per the best prevalent trade practices.

9. Sampling

9.1 Unless otherwise agreed to between the supplier and the purchaser, the procedure given in IS : 2500 (Part 1)-1973 'Sampling inspection tables: Part 1 Inspection by attributes and by count of defects (first revision)', shall be followed for sampling inspection.



All dimensions in millimetres.

Size	Pitch P	External						Internal					
		Major Dia		Pitch Dia		Minor Dia		Major Dia, Min	Pitch Dia		Minor Dia		
		Max	Min	Max	Min	Max	Min		Max	Min	Max	Min	
7.94 × 0.98	0.977	7.939	7.798	7.417	7.325	6.896	6.706	7.938	7.508	7.417	7.192	6.896	
9.52 × 0.98	0.977	9.525	9.380	9.004	8.908	8.484	8.288	9.525	9.101	9.004	8.781	8.484	
34.80 × 1.06	1.058	34.798	34.620	34.234	34.107	33.670	33.442	—	—	—	—	—	

FIG. 3 FORM OF THREAD

9.1.1 For dimensions, finish and workmanship; Inspection Level IV and Acceptable Quality Level (AQL) 2.5 percent as given in Tables 1 and 2 of IS : 2500 (Part 1)-1973 shall be followed.

9.1.2 For tests, Inspection Level I and Acceptance Quality Level (AQL) 2.5 percent as given in Tables 1 and 2 of IS : 2500 (Part 1)-1973 shall be followed.

EXPLANATORY NOTE

While preparing this specification, considerable assistance has been taken from the details supplied by the manufacturers of the product.